

*Q2
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17. (Amended) The method of claim 14 wherein the protein denaturant is urea.

Q3

22. (Amended) The method of claim 14 wherein the dilution of the purified protein occurs in about 1 minute or less.

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26. (Amended) An adjuvant composition comprising at least one purified recombinant invasin protein of claim 1, wherein administration of the adjuvant composition to an animal in combination with an antigen elicits an immune response to the antigen.

Q5

42. (Amended) An adjuvant composition comprising a purified recombinant invasin protein of claim 1 and having adjuvant activity, the invasin protein comprising an amino acid sequence derived from a protein of a member of the *Shigella* or *Salmonella* genus, or from an enteroinvasive *E. coli* wherein administration of the adjuvant composition in combination with an antigen to an animal results in production by Th2 cells of at least one cytokine selected from the group consisting of IL-4, IL-5, IL-6, IL-10 and IL-13.

Q6

43. (Amended) An adjuvant composition comprising a purified recombinant invasin protein of claim 1 and having adjuvant activity, the invasin protein comprising an amino acid sequence derived from a protein of a member of the *Shigella* or *Salmonella* genus, or from an enteroinvasive *E. coli* wherein administration of the adjuvant composition in combination with an antigen to an animal results in production of at least one class of immunoglobulin selected from the group consisting of IgG, IgE, IgM and IgA.

44. (Amended) A vaccine preparation comprising, a purified recombinant invasin protein of claim 1 having adjuvant activity, at least one antigen, and

A5 *CONT* a pharmaceutically acceptable carrier, diluent or excipient.

A6 61. (Amended) The vaccine preparation of claim 44, wherein the immune response is characterized by the production of at least one cytokine by Th2 cells.

A7 65. (Amended) A vaccine preparation comprising, a purified recombinant invasin protein of claim 1 and having adjuvant activity, the invasin protein comprising an amino acid sequence derived from a protein of a member of the *Shigella* or *Salmonella* genus, or from an enteroinvasive *E. coli*, at least one antigen, and a pharmaceutically acceptable carrier, diluent or excipient.

A8 68. (Amended) A vaccine preparation for conferring immunity against an organism expressing invasin protein antigens comprising, a purified recombinant invasin protein of claim 1 having adjuvant activity derived from the invasin protein antigens expressing organism against which immunity is desired.

A9 70. (Amended) A method for eliciting an immune response in an animal comprising, administering to an animal an immune response eliciting amount of an adjuvant composition comprising a purified recombinant invasin protein of claim 1.

A10 72. (Amended) The method of claim 70 wherein the purified recombinant invasin protein has a purity of at least about 97%.

A11 82. (Amended) The method of claim 70 wherein the class of immunoglobulin is chosen from the group consisting of IgG, IgE, IgM and IgA.

A12 90. (Amended) A method for stimulating the production of at least one cytokine by Th2 cells comprising, administering a cytokine production stimulating amount of a purified recombinant invasin protein of claim 1 comprising an amino acid sequence

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derived from a protein of a member of the *Shigella* or *Salmonella* genus, or from an enteroinvasive *E. coli*, wherein the cytokine produced is chosen from the group consisting of IL-4, IL-5, IL-6, IL-10 and IL-13.

A13
94. (Amended) A method for stimulating production of at least one class of immunoglobulin comprising administration of an immunoglobulin production stimulating amount of a purified recombinant invasin protein of claim 1 comprising an amino acid sequence derived from a protein of a member of the *Shigella* or *Salmonella* genus, or from an enteroinvasive *E. coli*, wherein the class or subclass of immunoglobulin produced is chosen from the group consisting of IgG, IgE, IgM and IgA.

A14
98. (Amended) A method for the delivery of pharmacologically active substances, therapeutic substances, cytotoxic substances, or diagnostic substances into cells comprising administering a pharmacologically active substance, cytotoxic substance, or diagnostic substance and a purified recombinant invasin protein of claim 1.

A15
100. (Amended) A method for the delivery of pharmacologically active substances, therapeutic substances, cytotoxic substances, or diagnostic substances to cells comprising a fused protein comprising a recombinant invasin protein of claim 1 and a pharmacologically active substance, therapeutic substance, cytotoxic substance, or diagnostic substance.

Please add the following new claims:

A16
101. The method of claim 13 wherein the protein denaturant is selected from the group consisting of guanidine hydrochloride, detergents, and urea.

102. The method of claim 13 wherein the protein denaturant
is urea.

A14
CONT

103. The method of claim 13 wherein the dilution of the
purified protein occurs in about 1 minute or less.

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